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HYDROGEN STORAGE INITIATIVE SERBIA**

**PROGRAM AND THE BOOK OF ABSTRACTS**

**JOINT EVENT OF THE 11<sup>TH</sup> YOUNG RESEARCHERS' CONFERENCE: MATERIALS  
SCIENCE AND ENGINEERING**

**AND**

**THE 1<sup>ST</sup> EUROPEAN EARLY STAGE RESEARCHERS' CONFERENCE ON HYDROGEN  
STORAGE**

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**Nenad Ignjatović**

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the 1<sup>st</sup> European Early Stage Researchers' Conference on Hydrogen Storage*

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## **TM 19**

### **COMPACTION PRESSURE'S INFLUENCE ON DENSITY AND ELECTRICAL PROPERTIES OF SINTERED CORDIERITE-BASED CERAMICS**

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Mechanical activation is widely used for sample preparation before the sintering process. However, the influence of pressure, which is used for compaction, has not been completely investigated. Cordierite,  $2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$ , is a very attractive high-temperature ceramic material, due to its outstanding electrical characteristics, such as the low temperature expansion coefficient, low dielectric constant and good mechanical properties. Based on our previous investigation, the mechanical activation of the starting mixtures with 5.00 mass%  $\text{TiO}_2$  was performed in a high energy ball mill during 10 minutes. Compaction pressure varied from 0.5 to 6 t/cm<sup>2</sup>. Differential thermal analysis (DTA) was used in order to determine characteristic temperatures within the system during heating. Sintering process was performed at 1350 °C for 4 h in air atmosphere. The phase composition of activated and sintered samples was analyzed by the X-ray diffraction method. Scanning electron microscopy was performed to analyze both compacted and sintered sample microstructure. This paper deals with the influence of compaction pressure on the densities of green bodies as well as on the sintered samples, along with electrical properties

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